

**REMARKS**

I. **INTRODUCTION**

Claims 2, 3, 5, 16, 17, 21, 25 and 26 have been cancelled, without prejudice. Claims 1, 6-10, 12-15, 19, 20 and 22-24 have been amended above. In particular, claims 1 and 22-24 have been amended to recite the subject matter of now-cancelled claim 5. Claims 6-10 have been amended to remove minor informalities therefrom and to depend from amended independent claim 1. Claims 12-15, 19 and 20 have been rewritten in independent form and/or amended to depend from such independent claims. New claims 27-35 have been added. Accordingly, claims 1, 4, 6-15, 18-20, 22-24 and 27-35 are now under consideration in the present application. Provided above, please find a claim listing indicating the current amendments to the previously-pending claims and claim addition on separate sheets so as to comply with the requirements set forth in 37 C.F.R. § 1.121. It is respectfully submitted that no new matter has been added.

Applicants appreciate Examiner's preliminary possible indication that original claims 5 and 6 may include allowable subject matter, subject to the obviation of the rejection of these claims under 35 U.S.C. § 112, second paragraph.

II. **INFORMATION DISCLOSURE STATEMENT**

In the Office Action, the Examiner confirms that the information submitted with the Information Disclosure Statements filed for the above

referenced application have been considered as to the merits. Applicants appreciate the consideration of all submitted materials by the Examiner.

Applicants confirm that they submitted all reference and information for the present application known to them in full compliance with the laws of the United States and 37 C.F.R. to appropriately bring such references to the attention of the U.S. Patent and Trademark Office.

### **III.    OBJECTIONS TO ABSTRACT, DRAWINGS AND CLAIMS**

The originally-submitted Abstract stands objected to as not being submitted on a separate sheet. The originally-filed drawings and claims stand objected to due to minor informalities.

As the Examiner shall ascertain, a new Abstract is provided herewith on a separate sheet to supplement the originally-filed Abstract and to comply with the requirements of M.P.E.P. 608.01(b). In addition, the originally-filed Fig. 1 has been supplemented with new Fig. 1 which is provided herewith as a Replacement Sheet labeled as such on a separate sheet. It is respectfully asserted that the drawing provided in this new Fig. 1 addresses all issues raised by the Examiner in the Office Action with respect to all pending claim (i.e., with independent claims 25 and 26 being cancelled above). Further, claims 10, 19 and 20 have been amended above to address the issues raised by the Examiner for objecting to these claims, and claims 26 and 26 have been cancelled, without prejudice.

For at least these reasons, Applicants respectfully submit that the objections to the Abstract, drawings and claims contained in the Office Action are now moot, and request that these objections should be withdrawn.

**IV. REJECTIONS UNDER 35 U.S.C. §112, ¶1 AND ¶2 SHOULD BE WITHDRAWN**

Claims 25 and 26 stand rejected under 35 U.S.C. §112, first paragraph as allegedly being non-enabling. As the Examiner shall ascertain, claims 25 and 26 have been cancelled above, without prejudice. Accordingly, the rejection of these claims under 35 U.S.C. §112, first paragraph is now moot, and should therefor be withdrawn.

Further, claims 1-26 stand rejected under 35 U.S.C. §112, second paragraph as allegedly being indefinite. As an initial matter, claims 25 and 26 have been cancelled above, without prejudice. Accordingly, the rejection of claims 25 and 26 under 35 U.S.C. §112, second paragraph is now moot, and should therefor be withdrawn.

With respect to the recitation of an arrangement which facilitates a production of at least two radiations", independent claims 1 and 21-24 have been amended above to recite "an arrangement which is configured to produce at least two radiations." Accordingly, one having ordinary skill in the art would understand that the limitation of the arrangement which is configured to produce at least two radiations should be physical or logically made to do so. Thus, this point raised by the Examiner is believed to be addressed.

Regarding the recitation of the phrase "configured to" as recited in claims 1, 11, 21, 22 and 24, the Examiner believes that such recitation "implies or

makes optional the 'delay' but fails to specifically claim the arrangement provides a delay." (Office Action, p. 7, Ins. 20-21). Applicants respectfully disagree, and respectfully submit that such recitation clearly sets the metes and bounds of the claimed invention. As indicated above, one having ordinary skill in the art would understand that the limitation of the arrangement which is configured to delay a radiation should be physical or logically made to do so. Such physical/logical ability is not "optional" but requisite in the above-referenced claims, and therefore absolutely sets forth the metes and bounds of the invention recited in claims 1, 11, 21, 22 and 24.

Accordingly, for at least the reasons set forth herein above, the rejection of claims 1-24 under 35 U.S.C. §112, second paragraph should be withdrawn.

V. **REJECTIONS UNDER 35 U.S.C. §§102 and 103 SHOULD BE WITHDRAWN**

Claims 1-4, 7-10, 21-24 and 26 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 5,565,985 issued to Knüttel (the "Knuttel Patent"). Claims 1-3, 7-11 and 21-23 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 6,014,214 issued to Li (the "Lee Patent"). Claims 1-3, 7, 10, 11 and 21-23 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by International Publication No. WO 01/388820 which corresponds to U.S. Patent No. 6,806,963 issued to Waelti et al. (the "Waelti Publication"). Claims 12-20 and 25 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over the Knuttel Patent.

As an initial matter, claims 25 and 26 have been cancelled above, without prejudice. Accordingly, the rejections of claim 25 under 35 U.S.C. §103(a) as allegedly being obvious over the Knuttel Patent, and of claim 26 under 35 U.S.C. §102(b) as allegedly being anticipated by the Knuttel Patent are now moot, and should therefore be withdrawn. In addition, independent claims 1 and 22-24 have been amended above to recite the subject matter of now-cancelled claim 5 which has not been rejected under either 35 U.S.C. §102(b) or 35 U.S.C. §103(a) in view of any reference. Thus, the rejections of claims 1 and 22-24 under 35 U.S.C. §102(b) should be withdrawn.

Further, claims 12 and 14 have been rewritten in independent form. In particular, claim 12 has been amended to include the subject matter of originally-filed claim 12, and claim 14 has been amended to include the subject matter of the original filed claim 14, 16 and/or 17 (in the alternative). Applicants respectfully assert that the Hamm Patent fails to teach or suggest the subject matter recited in independent claims 12 and 14, and the claims which depend therefrom for at least the following reasons.

In order for a claim to be rejected for obviousness under 35 U.S.C. § 103, not only must the prior art teach or suggest each element of the claim, the prior art must also suggest combining the elements in the manner contemplated by the claim. *See KSR International Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1731 (2007); *Takeda Chemical Industries, Ltd. v. Alphapharm PTY, Ltd.*, No. 06-1329, 2007 WL 1839698, \*5 (June 28, 2007 Fed.Cir.). "It is improper to use the inventor's disclosure as a road map for selecting and combining prior art disclosures." *See Grain Processing Corp. v. American Maize-Products Corp.*,

840 F.2d 902, 907 (Fed. Cir. 1988). "[T]he reference must be viewed without the benefit of hindsight afforded to the disclosure." *In re Paulsen*, 30 F.3d 1475, 1482 (Fed. Cir. 1994). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicants' disclosure. See *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991).

A. Claim 12 and Dependent Claim(s)

Applicants' invention, as recited in amended independent claim 12, relates to an apparatus for irradiating a sample, which comprises, *inter alia*:

- a) an interferometer forwarding an electromagnetic radiation; and
- b) a sample arm receiving the electromagnetic radiation, the sample arm including an arrangement which is configured to produce at least two radiations from the electromagnetic radiation so as to irradiate the sample, and to delay a first radiation of the at least two radiations with respect to a second radiation of the at least two radiations, **wherein the delay of a path of the first radiation compared to a path of the second radiation is at least about 500µm in air.**

Applicants respectfully assert that the Knuttel Patent in no way teaches or suggests that a **delay of a path of a first radiation produced in a sample arm compared to a path of a second radiation produced in the sample arm is at least about 500µm in air**, as recited in amended independent claim 12 of the above-identified application.

In the Office Action, the Examiner admits that the Knuttel Patent fails to disclose the delay of a path of the first radiation as compared to a path of the second radiation is 500µm in air. (See Office Action, p. 23, 3<sup>rd</sup> para., and p.

25, Ins 2-3). However, the Examiner believes that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a hologram based on a source bandwidth and the sample under test to provide a desired distance (delay) between the minimum and maximum focal points." (*Id.*, p. 25, Ins. 4-7).

In support of this belief, the Examiner believes that the Knuttel Patent teaches a large depth of field in column 2, line 67 to column 3, line 1 thereof. (See *id.*, p. 25, In. 2). However, the Knuttel Patent only states that its object is "to permit high spatial resolution in lateral dimension while covering a large field of view in depth direction without severe penalty by signal loss." (Knuttel Patent, col. 2, In. 67 to col. 3, In. 2). Thus, such disclosure of the Knuttel Patent does not deal with having a large depth, but only having *a large field of view* in the depth direction. Indeed, it cannot be denied that the Knuttel Patent provides absolutely no teaching or suggestion of having the delay of the path of the first radiation produced in the sample arm compared to the path of a second radiation produced in the sample arm that is at least about 500 $\mu$ m in air, as recited in amended independent claim 12. Similarly to the Examiner admission in the Office Action, nowhere in the Knuttel Patent is there any such teaching or suggestion.

Thus, Applicants respectfully submit that the Knuttel Patent does not render obvious the subject matter recited in amended independent claim 12. Claim 13 which depends from independent claim 12 is also not taught, suggested or disclosed by the Knuttel Patent for at least the same reasons.

Thus, withdrawal of the rejections of these claims under 35 U.S.C. § 103(a) is respectfully requested.

B. Independent Claim 14 and Dependent Claim(s)

Applicants' invention, as recited in amended independent claim 14, relates to an apparatus for irradiating a sample, which comprises, *inter alia*:

- a) an interferometer forwarding an electromagnetic radiation; and
- b) a sample arm receiving the electromagnetic radiation, the sample arm including an arrangement which is configured to produce at least two radiations from the electromagnetic radiation so as to irradiate the sample, and to delay a first radiation of the at least two radiations with respect to a second radiation of the at least two radiations, wherein **the arrangement has at least one of:**
  - **an optical section with a refractive index of at least 1.5,**
  - **a first section which has silicon, or**
  - **a second section which has an anti-reflective coating on at least one surface thereof.**

As an initial matter, Applicants respectfully assert that the Knuttel Patent in no way teaches or suggests that **an arrangement of a sample arm (configured to produce two radiations so as to irradiate as sample) having (i) an optical section with a refractive index of at least 1.5, (ii) a first section with has silicon, and/or (iii) a second section which has an anti-reflective coating on at least one surface thereof**, as recited in amended independent claim 14 of the above-identified application.

As an initial matter, Applicants respectfully assert that the Knuttel Patent does not teach or suggest **the optical section with a refractive index of at least 1.5**. In the Office Action, the Examiner admits that the Knuttel Patent

"fails to teach the specifics such as the index of reflection of the lens or holographic plate ...," but contends that it would have been obvious to one having ordinary skill in the art to do so. (Office Action, p. 25, Ins. 14-19). Applicants respectfully disagree. Indeed, the Examiner has not provided any evidence whatsoever to support this contention that it would be obvious to provide the optical section with a refractive index of at least 1.5. If the Examiner is basing his belief on a personal knowledge, Applicants respectfully request that the Examiner furnish an affidavit or declaration in support thereof, and provide Applicants an opportunity to present their own evidence, if appropriate. (See 37 C.F.R. § 1.104(d)(2)). In the absence of such declaration/affidavit or support of this subject matter to be provided in another reference, Applicants respectfully assert that the Knuttel Patent fails to teach or suggest **the optical section with a refractive index of at least 1.5.**

In addition, it is respectfully asserted that the Knuttel Patent does not teach or suggest **a first section which has silicon**. In the Office Action, the Examiner admits that the Knuttel Patent does not teach the material of the plate. (See *id.*, p. 25, Ins. 14-16). However, the Examiner does not point to any section of the Knuttel Patent or any other reference as allegedly providing any similar materials to a section of the arrangement which has silicon. Indeed, neither the Examiner nor the Knuttel Patent even remotely mention the use of silicon by others in a section of the arrangement,

Further, the Examiner believes that while the Knuttel Patent fail to teach or suggest **a second section (of the arrangement) which has an anti-reflective coating on at least one surface thereof**, he contends that such

recited subject would be obvious. (See *id.*, p. 26, Ins. 4-7 and 13-15). In support of this belief, the Examiner apparently takes official notice of such belief as allegedly it was “well known in the interferometer art to eliminate reflections from the various optical elements that may produce unwanted interferences and/or intensity noise.” (*Id.*). If the Examiner is basing his belief on personal knowledge, Applicants again respectfully request that the Examiner furnish an affidavit or declaration in support thereof, and provide Applicants an opportunity to present their own evidence, if appropriate. (See 37 C.F.R. § 1.104(d)(2)). In the absence of such declaration/affidavit or support of this subject matter to be provided in another reference, Applicants respectfully assert that the Knuttel Patent fails to teach or suggest a **second section (of the arrangement) which has an anti-reflective coating on at least one surface thereof.**

Thus, Applicants respectfully submit that the Knuttel Patent does not render obvious the subject matter recited in independent claim 14. Claims 15, 18, 19 and 20 which depends from such independent claim 14 are also not taught or suggested by the Knuttel Patent. Thus, withdrawal of the rejection of these claims under 35 U.S.C. § 103(a) is respectfully requested.

Thus, withdrawal of the rejections of these claims under 35 U.S.C. § 103(a) is respectfully requested.

**VI. NEW CLAIMS 27-35**

New independent claims 27 and 32 and new claims 28-31 and claims 33-35 which depend from independent claims 27 and 32, respectively have been added above to cover a certain exemplary embodiments of

Applicants' invention. Support for these new claims can be found in the originally-filed specification and drawings. Applicants respectfully assert that new claims 27-35 are allowable over the Knutte Patent, the Li Patent and the Waelti Publication. It is respectfully requested that a confirmation of patentability of this claim be provided in the next communication for this application to Applicants' representatives.

**VII. CONCLUSION**

In light of the foregoing, Applicants respectfully submit that the pending claims are in condition for allowance. Prompt reconsideration and allowance of the present application are therefore earnestly solicited. The Examiner is invited to contact the undersigned to expedite the prosecution of this application if any issues remain outstanding.

Respectfully submitted,

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